

WHAT IS CLAIMED IS:

1. A remanufacturing method of remanufacturing a process cartridge comprising:

5 (a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling said toner developing container and said cleaning container at opposite longitudinal ends of said process cartridge;

10 said toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

said cleaning container including an electrophotographic photosensitive drum;

15 (b) a container separating step of separating said process cartridge into said toner developing container and said cleaning container by disengaging said pins from said process cartridge;

20 (c) a developing roller dismounting step of dismounting said developing roller from said toner developing container separated by said container separating step;

25 (d) a developing blade dismounting step of dismounting said developing blade from said toner developing container separated by said container separating step;

(e) an elastic member mounting step of

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mounting an elastic member to a longitudinally inside of an end seal provided adjacent each of opposite longitudinal ends of a or said developing roller, at a position laterally outside of said end seal;

5 (f) a developing blade mounting step of mounting a or said developing blade on a or said toner developer container;

10 (g) a developing roller mounting step of mounting a or said developing roller on said toner developer container having said developing blade;

(h) a toner refilling step of refilling the toner into a or said toner accommodating portion of said toner developing container having said developing blade and said developing roller; and

15 (i) a container coupling step of coupling said toner developing container having said developing blade and said developing roller with a or said cleaning container by engaging a or said pin into them.

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2. A method according to Claim 1, further comprising a flexible sheet mounting step of mounting, after said cut-away portion sealing step and before said toner refilling step, a flexible sheet to said toner developing container so as to extend along the longitudinal direction of said developing roller when said developing roller is mounted to said toner

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developing container.

3. A method according to Claim 2, wherein in
said flexible sheet mounting step, each of
5 longitudinal ends of said flexible sheet extends over
a surface of said elastic member and a part of said
end seal.

4. A method according to Claim 2 or 3, further
10 comprising first and second side seal mounting step of
mounting, after said flexible sheet mounting step, a
first side seal continuously on a longitudinal end of
said flexible sheet mounted on said toner developing
container and said toner developing container, and a
15 second side seal continuously on the other
longitudinal end of said flexible sheet and said toner
developing container.

5. A remanufacturing method of remanufacturing a
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(a) a step of preparing a used process
cartridge which comprises a toner developing
container, a cleaning container and pins for coupling
said toner developing container and said cleaning
25 container at opposite longitudinal ends of said
process cartridge;

said toner developing container including a

toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

said cleaning container including an electrophotographic photosensitive drum;

5 (b) a container separating step of separating said process cartridge into said toner developing container and said developing container by disengaging said pins from said process cartridge;

10 (c) a developing roller dismounting step of dismounting said developing roller from said toner developing container separated by said container separating step;

15 (d) a developing blade dismounting step of dismounting said developing blade from said toner developing container separated by said container separating step;

20 (e) an elastic member mounting step of mounting an elastic member to a longitudinally inside of an end seal provided adjacent each of opposite longitudinal ends of a or said developing roller, at a position laterally outside of said end seal;

25 (f) a flexible sheet mounting step of mounting a flexible sheet to a or said toner developing container so as to extend along the longitudinal direction of said developing roller when said developing roller is mounted to said toner developing container;

5 (g) first and second side seal mounting step of mounting a first side seal continuously on a longitudinal end of said flexible sheet mounted on said toner developing container having the flexible sheet and said toner developing container having the flexible sheet, and a second side seal continuously on the other longitudinal end of said flexible sheet and said toner developing container having flexible sheet;

10 (h) a developing blade mounting step of mounting a or said developing blade on said toner developer container having the flexible sheet;

(i) a developing roller mounting step of mounting a or said developing roller on said toner developer container having the flexible sheet;

15 (j) a toner refilling step of refilling the toner into a or said toner accommodating portion of said toner developing container having said flexible sheet; and

20 (k) a container coupling step of coupling said toner developing container having said flexible sheet with a or said cleaning container by engaging a or said pin into them.

25 6. A method according to Claim 1 or 5, wherein said elastic member is mounted on a side of said end seal.

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3 and 5
6. A method according to any one of Claims 1 to 5, wherein said seal is made of a plastically deformable material.

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3 and 5
7. A method according to any one of Claims 1 to 6, wherein said toner refilling step is carried out through a toner filling opening after said elastic member mounting step, said developing blade mounting step and said developing roller mounting step.

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8. A method according to any one of Claims 1 to 7, wherein in said developing blade mounting step, a new developing blade or a used developing blade is mounted.

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9. A method according to any one of Claims 1 to 8, wherein in said developing roller step, a new or used developing roller is mounted.

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10. A method according to any one of Claims 1 to 9, wherein prior to said container coupling process, said electrophotographic photosensitive drum and said cleaning blade are dismounted from said cleaner container, and toner which has been removed from said electrophotographic photosensitive drum and accommodated in said cleaner container, is removed.

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12. A method according to Claim 11, wherein after the toner is removed, a new or used electrophotographic photosensitive drum and a new or used cleaning blade are mounted.

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13. A method according to any one of Claims 1 to 12, wherein said remanufacturing method is implemented with a toner seal for sealing a toner supply opening provided to supply the toner accommodated in said toner accommodating portion to said developing roller having been pulled out to supply toner accommodated in said toner accommodating portion to said developing roller.

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14. A remanufacturing method of remanufacturing a process cartridge comprising:

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(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling said toner developing container and said cleaning container at opposite longitudinal ends of said process cartridge;

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said toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

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said cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating said process cartridge into said toner developing container and said developing container by disengaging said pins from said process cartridge;

5 (c) a developing roller dismounting step of dismounting said developing roller from said toner developing container separated by said container separating step;

10 (d) a developing blade dismounting step of dismounting said developing blade from said toner developing container separated by said container separating step;

15 (e) an elastic member mounting step of mounting an elastic member to a longitudinally inside of an end seal provided adjacent each of opposite longitudinal ends of a or said developing roller, at a position laterally outside of said end seal;

20 (f) a developing blade mounting step of mounting a or said developing blade on a or said toner developer container;

(g) a developing roller mounting step of mounting a or said developing roller on said toner developer container having said developing blade;

25 (h) a toner refilling step of refilling the toner into a or said toner accommodating portion of said toner developing container having said developing blade and said developing roller, through the toner

supply opening of said toner developing container having said seal; and

(i) a container coupling step of coupling said toner developing container having said developing blade and said developing roller with a or said cleaning container by engaging a or said pin into them.

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15. A method according to Claim 14, further comprising a flexible sheet mounting step of mounting, after said cut-away portion sealing step and before said toner refilling step, a flexible sheet to said toner developing container so as to extend along the longitudinal direction of said developing roller when said developing roller is mounted to said toner developing container.

16. A method according to Claim 15, wherein in said flexible sheet mounting step, each of longitudinal ends of said flexible sheet extends over a surface of said elastic member and a part of said end seal.

17. A method according to Claim 15 or 16, further comprising first and second side seal mounting step of mounting, after said flexible sheet mounting step, a first side seal continuously on a longitudinal end of

said flexible sheet mounted on said toner developing container and said toner developing container, and a second side seal continuously on the other longitudinal end of said flexible sheet and said toner developing container.

18. A remanufacturing method of remanufacturing a process cartridge comprising:

(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling said toner developing container and said cleaning container at opposite longitudinal ends of said process cartridge;

said toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

said cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating said process cartridge into said toner developing container and said developing container by disengaging said pins from said process cartridge;

(c) a developing roller dismounting step of dismounting said developing roller from said toner developing container separated by said container separating step;

(d) a developing blade dismounting step of dismounting said developing blade from said toner developing container separated by said container separating step;

5 (e) an elastic member mounting step of mounting an elastic member to a longitudinally inside of an end seal provided adjacent each of opposite longitudinal ends of a or said developing roller, at a position laterally outside of said end seal;

10 (f) a flexible sheet mounting step of mounting a flexible sheet to a or said toner developing container so as to extend along the longitudinal direction of said developing roller when said developing roller is mounted to said toner
15 developing container;

(g) first and second side seal mounting step of mounting a first side seal continuously on a longitudinal end of said flexible sheet mounted on said toner developing container having said flexible
20 sheet and said toner developing container having said flexible sheet, and a second side seal continuously on the other longitudinal end of said flexible sheet and said toner developing container having said flexible sheet;

25 (h) a developing blade mounting step of mounting a or said developing blade on said toner developer container having the flexible sheet;

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(i) a developing roller mounting step of mounting a or said developing roller on said toner developer container having said flexible sheet;

5 (j) a toner refilling step of refilling the toner into a or said toner accommodating portion of said toner developing container having said flexible sheet, said developing blade and said developing roller, through the toner supply opening of said toner developing container having said flexible sheet; and

10 (k) a container coupling step of coupling said toner developing container having said flexible sheet, said developing blade and said developing roller with a or said cleaning container by engaging a or said pin into them.

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19. A method according to Claim 14 or 18, wherein said elastic member is mounted on a side of said end seal.

20 ¹⁸ 20. A method according to any one of Claims 14 to 19, wherein said seal is made of a plastically deformable material.

25 ¹⁸ 21. A method according to any one of Claims 14 to 20, wherein in said developing blade mounting step, a new developing blade or a used developing blade is mounted.

a 18 22. A method according to any one of Claims 14 to 21, wherein in said developing roller step, a new or used developing roller is mounted.

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a 18 23. A method according to any one of Claims 14 to 22, wherein prior to said container coupling process, said electrophotographic photosensitive drum and said cleaning blade are dismounted from said cleaner container, and toner which has been removed from said electrophotographic photosensitive drum and accommodated in said cleaner container, is removed.

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24. A method according to Claim 23, wherein after the toner is removed, a new or used electrophotographic photosensitive drum and a new or used cleaning blade are mounted.

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a 18 25. A method according to any one of Claims 14 to 24, wherein said remanufacturing method is implemented with a toner seal for sealing a toner supply opening provided to supply the toner accommodated in said toner accommodating portion to said developing roller having been pulled out to supply toner accommodated in said toner accommodating portion to said developing roller.

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26. A method according to any one of Claims 1, 5, 14 and 18, wherein said process cartridge comprises a gear fixed co-axially with said electrophotographic photosensitive drum and a gear fixed co-axially with said developing roller, which gears are in meshing engagement, and wherein after said container coupling process, said toner developing container and said cleaner container are rotated about said pin to disengage said gears from each other or to make a back clearance of the meshing engagement larger than that during image forming operation, and the disengagement or larger back clearance is maintained.

27. A method according to Claim 26, wherein said toner developing container and said cleaner container are rotated toward each other about said pin at a portion across said pin from said electrophotographic photosensitive drum, and a tape is stuck on said toner developing container and said cleaner container to maintain the disengagement or the larger back clearance.